

## THAT WHICH IS CLAIMED:

1           1. A substantially purified protein having anti-thrombin activity,  
2           wherein said protein is isolated from the salivary glands of a species of the order  
3           Nematocera.

1           2. The protein of claim 1 wherein said protein comprises the amino acid  
2           sequence given in SEQ ID NO: 2.

1           3. The protein of claim 2, wherein said protein is isolated from the  
2           salivary glands of a species of *simulium*.

1           4. The protein of claim 3, wherein said species is selected from the  
2           group consisting of *S. vittatum*, *S. metallicum*, *S. bivittatum*, *S. argus*, and *S.*  
3           *ochraceum*.

1           5. The protein of claim 4, wherein said species is *S. vittatum*.

1           26. The protein of claim 1, wherein said protein is produced by  
2           recombinant methods.

1           7. An isolated nucleotide sequence which encodes a protein having anti-  
2           thrombin activity, wherein said protein is isolated from the salivary glands of a  
3           species of the order Nematocera.

1           8. The nucleotide sequence of claim 7, wherein said protein comprises  
2           the amino acid sequence set forth in SEQ ID NO: 2.

1           9. The nucleotide sequence of claim 8, wherein said sequence comprises  
2           the DNA sequence set forth in SEQ ID NO: 1.

1           10. A nucleotide sequence that hybridizes to the sequence of claim 8  
2 under stringent conditions.

1           11. A vector comprising the nucleotide sequence of claim 8.

1           12. A host cell comprising the vector of claim 11.

1           13. A vector comprising the nucleotide sequence of claim 9.

1           14. A host cell comprising the vector of claim 13.

1           15. A method for producing a protein having anti-thrombin activity, said  
2 method comprising:

3           culturing a procaryotic or eucaryotic cell that is transformed with a  
4 nucleotide sequence encoding the protein of claim 2 under conditions such that said  
5 protein is produced; and,

6           isolating said protein.

1           16. A method for treating venous thrombosis in a mammal, said method  
2 comprising administering a therapeutically effective amount of an anti-thrombin  
3 protein, wherein said protein comprises the amino acid sequence set forth in SEQ ID  
4 NO: 2 to said mammal.

1           17. The method of claim 16, wherein said protein is produced by  
2 recombinant methods.

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